

WINGS OF MEN

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present status of the new aerial craft as regards government usage for military purposes at home and abroad.

In the matter of protective devices to be used against aeroplanes, several important developments have been announced, among them the new aerial torpedo designed by J. J. McIntyre, a Brooklyn inventor.

This instrument is three feet in length, is composed of brass and steel and its head is tapered something after the style of the Whitehead torpedo, having three curved flanges. At the end are three projectiles which aid in its propulsion from the gun. The latter is placed on an elevated stand, on a circular adjustable swivel, admitting of any range and direction. The torpedo barrel is capable of holding a large quantity of shot and other material for the purpose of penetration, and the principle is a peculiar kind of powder which has the property of generating explosive gas.

This is capable of being set to a time fuse, or if preferred, can be made to explode on touching any part of a balloon or aeroplane. In operation, the gas escapes from the rear end of the projectile and is forced against the three flange-like blades. A revolving motion is begun which sends

factory in France. He won \$50,000 alone for his flight from London to Manchester. The Wrights have, of course, made big money. It is reported they sold the French rights to their machine for \$100,000, and the German patent for \$200,000. At the recent Belmont Park meeting Grahame-White won \$13,600; Moisant, \$13,550; Johnstone, \$9,608.33; Latham, \$8,183.33; Hoxey, \$6,708.33; and De Lesseps, Le Blanc, Drexel, Brookins and the other fliers smaller amounts.

A brilliant galaxy of fliers is at present before the public, here and abroad. Included are the most daring and expert drivers of aeroplanes aviation has yet known, and their interviews and reports of flights form a most fascinating study of unusual emotions. Perhaps the most remarkably vivid tale of altitude flying was Johnstone's recital when he stepped out of the "baby" Wright at Belmont after climbing over nine thousand feet in the plane. It was reproduced several weeks ago in these columns and occasioned a great deal of comment. J. Armstrong Drexel, a millionaire aeroplaneist, talking in a similar vein says: "There is nothing much to say about going up for altitude. It's cold up in the clouds. No, you cannot see very much in a Bleriot, owing to the wind from the propeller and the oil that is splashed in your face. After getting high up, it is hard to find your way home as a rule, because the landmarks are difficult to pick out at anything above say, six thousand feet from

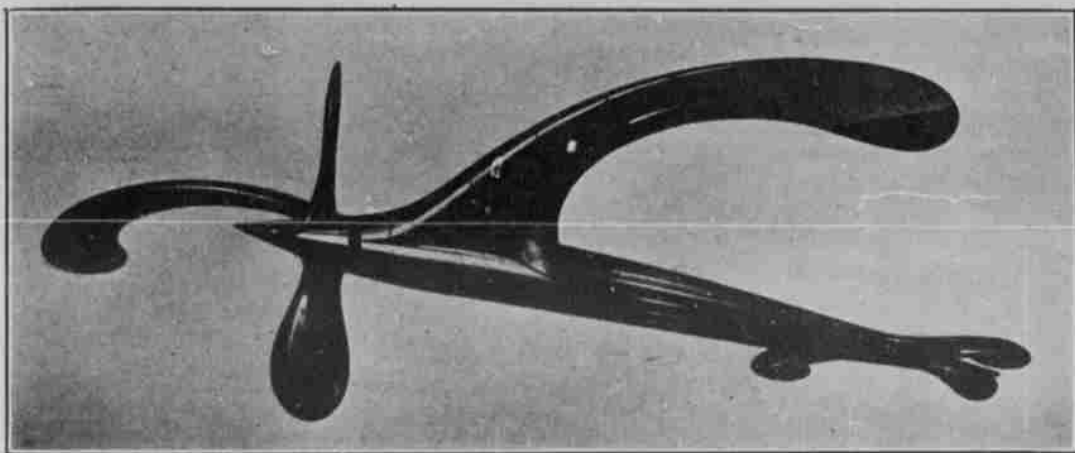
trepid. His flight from New York to Philadelphia and return the same day and another at San Diego when he flew thirty miles out over the ocean, crossed the boundary line between the United States and Mexico and returning in the face of a thirty mile wind circled San Diego and landed at the starting point after he had been given up for lost, are among his best. Among the new owners of aeroplanes who are now taking lessons in flying are Allan R. Ryan, Cornelius Vanderbilt, Robert Collier and Howard Crosby. Following a recent aeroplane show in Philadelphia, five planes were sold outright to individuals.

Prince Henry of Prussia is learning to fly and Princess Henry has made a number of flights with him. And of the nerve, steadiness and quick thinking necessary in learning to fly it would be difficult to find a more graphic statement of the perquisites of aeroplane driving than the recent remarks of Clifford B. Harmon, who, writing for the Air-Scout, the official organ of the United States Aeronautical Reserve, says:

"Fundamentally, I think aviators are born, like poets. But confidence does not finish the job. There is much to learn. And it is an arduous school. The best aviators are men who are abstemious in all things. I can probably give the best illustration of the fashion of learning to fly by telling how I did it. There is such a thing as being air wise. Every airman knows it. But he can hardly explain it. It has to do with a comprehension of the subtleties of the aerial ocean. The conditions of the atmosphere are complex. There are columns of warm air traveling upward and great waves of cooler air that are constantly pressing downward. They create what are called air holes. You read about them often. Their area is of all varieties of size. They bother you unless you are accustomed to them. I grew familiar with this phenomena in my ballooning experience and found it of use when I took up aeroplane driving. It also enabled me to get the 'feel' of that impalpable fluid called the air. It was an advantage but it did not enable me to sit in an aeroplane and simply fly. Before I ever flew my Farman biplane I studied it carefully. I acquired a thorough understanding of every minute part. I made myself familiar with the necessity for every strut, wire and rib. The next step was to seat myself in the aeroplane alone. I spent several hours in the craft without moving an inch. I simply learned instinctively to place my hands on the various levers and to throw my body about to obtain various results. One would suppose that all this preparation would enable the candidate to fly without much further study. Let that be farthest from your mind if you expect to drive your flying machine. Do as I did. Drive it across a spacious, treeless field with your motor throttled and your mechanics hanging to the tail. The object is to get the feel of the craft in motion. The next step is the effort to leave the ground. Remember you have spent many days in preparation. Presumably you know everything that it is possible to know. But the moment you leave the ground you feel helpless. It seems as if you had no control. You have the queer sensation of traveling over nothing. If you are fortunate you wobble along a zigzag course and come down—hard. As you continue with your self-taught lesson you discover the serious things about flying. You learn that infinite delicacy is the prime essential in handling an aeroplane.

"In time the gusts of wind that strike your craft from all sides become as plain to you as an automobile road. You realize that when a gust throws one wing high you must depress it with your stabilizing flaps and elevate the other side by the same means. After a few such experiences

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J. BERNARD WALKER'S CONCEPTION OF THE PASSENGER CARRIER OF THE IMMEDIATE FUTURE.

Mr. Walker is a close student of aviation and declares that a machine such as illustrated above from his design would be capable of three hundred miles an hour. Its principal dimensions 100 feet long with a wing spread of 110 feet. On thousand and five hundred horse power is required to drive or drag the wings and conic body through the air.

In flight, landing skids are withdrawn entirely within the body of the Aero. The body is practically an air tight structure fluted on its under side as is the Blackfish and flatlike as is the Dragon Fly. The pilot house is placed "midships," and must be a Camera Obscura, where the right horizon; the left; the front; rear horizon; zenith and the earth continually appear in checker board space side by side. These views are gathered by the Photo-Telescope, five of which are in the cone in front of the propeller, and five others in the stern.

the torpedo through the air similarly to the manner in which the old Whitehead torpedo traveled through the water. The head of the torpedo is filled with dynamite and around the sides are scattered hundreds of small shot. When the torpedo is exploded the shellshot are spread in all directions, like grape shot, tearing holes in everything with which they come in contact.

Commercially little has been done, if anything, with the heavier than air craft. Passenger carrying, in fact, has been for the sport of the thing rather than profit and aside from the engine building activity of Curtiss and the sober efforts of the Wrights to develop their cars, the real flying has been confined to spectacular exhibitions and money making by the fliers. The winnings of all of the more prominent airmen have piled up steadily and enormously during the year. Up to the last of October it is estimated French aviators carried off about \$600,000 in prize money. Morane in three months won \$70,000 of this sum. Paulhan, who two years ago was a mechanic earning about \$15 a week, has made fully \$200,000 and has retired from flying exhibitions, devoting his money to the establishment of an aeroplane

the ground. High climbing is very fascinating and personally I prefer it to cross-country flying."

Most picturesque of all of the fliers is Hamilton, who has been before the public for years as a balloonist and aerialist generally. His experiences in the air and dropping through it are as varied as they are innumerable. His falls have been countless. He himself says of recent years he has fallen a total of eleven thousand feet, most of the tumbles being from a distance of two hundred feet or more. He declares that falling is not an unpleasant sensation and that he falls as easily and with as little concern as he goes up, providing there is water underneath that he can light in. "Double up like a ball just before you hit the water and you'll come through all right every time," is his advice. His longest fall was 4,200 feet from a balloon. He declares that the popular idea that a man falling from a great height will be dead before he strikes the ground is a mistake, and that the only danger of dying on the way down is from heart failure. Granting a good, strong heart, Hamilton vouches for it that a man can figure on being very much alive just before he hits the earth. He is daring and in-